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(56) Documents cited
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(54) Personal single station public broadcast radio receiver

(57) A radio receiver designed to receive a single transmission at a very much reduced size weight and cost so much so that several might be owned by any individual expressly to receive particular radio stations and Radio Station operators might contemplate supplying them free or at subsidized charge to enlarge their audiences. The required transmission is adjusted by turning trimmer 2 and moving a lever 3 of an oscillator coil (4, Fig 2) along a ferrite rod (5) to the point where oscillation just ceases. To operate the radio set an earphone jack plug is inserted in the switch socket 1 which connects the earphone and switches the set on.

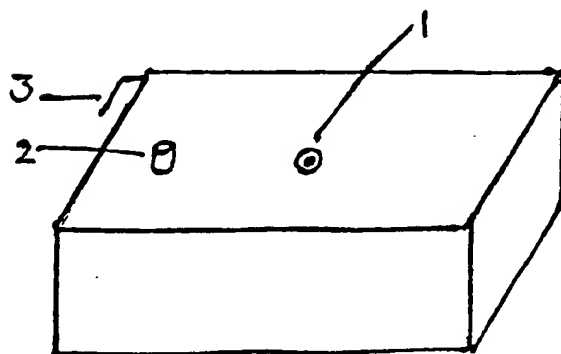
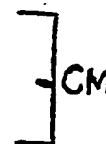


FIG. 3



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1982.

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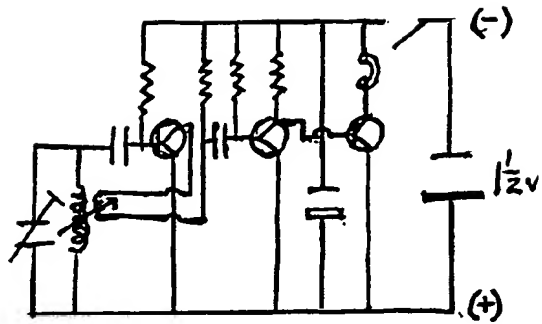


FIG. 1

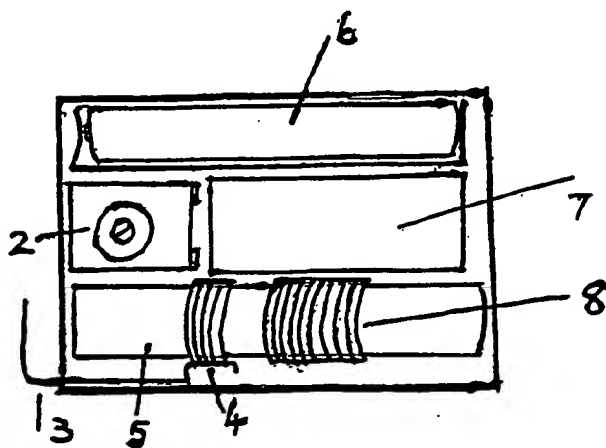


FIG. 2

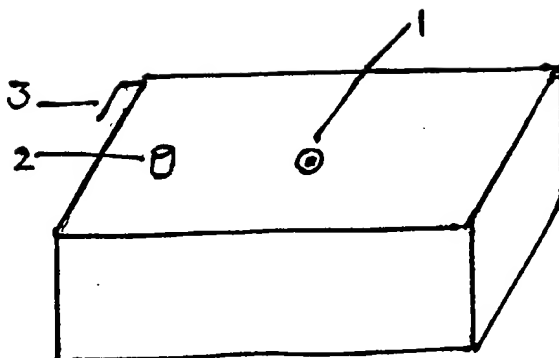


FIG. 3

PERSONAL SINGLE STATION PUBLIC BROADCAST RADIO RECEIVER

This invention relates to a Personal Single Station Public Broadcast Radio Receiver.

The development of Public Broadcast radio receivers has been aimed at achieving a high degree of sensitivity and selectivity in reception and a wide coverage of Public Broadcast radio signals. These aims have resulted in complexity of design and some compromising in the achievement of all of these ends.

With the spread of local Public Broadcasting there is the possibility of the acceptability of a receiver which is designed to receive a single transmission and this opens up the possibility of marketing a receiver at very much reduced cost and size so much so that several might be owned by any individual expressly to receive particular radio stations. Radio Station operators might even contemplate supplying free these low cost receivers to enlarge their audiences.

By eliminating the need for selectivity and sensitivity it is possible to achieve adequate quality and strength of signal for earphone reception without any R.F. or I.F. amplification or wide-ranging tuning capacitance and only the simplest of L.F. amplification is required using Transistors operating at $1\frac{1}{2}$ volts.

This invention is such a receiver and at Figure 1 will be found the electrical circuit at Figure 2 the drawing of the interior layout of the components and at Figure 3 the exterior of the non-metallic container with the controls.

To operate the set the earphone jack plug is inserted in the switch socket 1 which connects the earphone and switches the set on. The required transmission will then be heard and the level of reception is adjustable by turning the Tuner trimmer 2 and the movement by the lever 3 of the Oscillator coil 4 along the Ferrite Rod 5 to the point where oscillation just ceases. A $1\frac{1}{2}$ volts single cell dry battery (HP 7) 6 provides the power. The module for the detector and L.F. amplification is at 7. The number of turns of wire on the aerial coil 8 coupled with the Trimmer 2 will determine the signal frequency at which the set operates.

CLAIMS

- (1) A personal radio receiver, being a receiver for listening by means of an earpiece, which is constructed to receive a radio signal on a fixed frequency thus avoiding the attenuation of signal strength which occurs in the course of achieving selectivity and wide coverage of signal frequencies and the attendant bulk, weight and cost thereof.
- (2) A receiver as in Claim (1) which by virtue of the reduction in attenuation of signal strength and the consequent absence of the need for radio frequency amplification, the size, weight and cost of the receiver are reduced.
- (3) A receiver as in Claims (1) and (2) which by virtue of the operation on a single frequency and the consequent absence of the need for frequency selection components, the size weight and cost of the receiver are further reduced.
- (4) A receiver as in Claims 1, 2 and 3 in which the signal determination is achieved by a trimmer capacitor and a simple aerial of the requisite number of turns over a ferrite rod with sensitivity achieved by an oscillator coil capable of movement along the ferrite rod.
- (5) A receiver as in Claims 1, 2, 3 and 4 which on account of the simplicity of design, the need for alignment of subsidiary circuits is eliminated and requirement for maintenance is reduced to an absolute minimum.
- (6) A receiver as in Claims 1, 2, 3, 4 and 5 which on account of the reduced size and weight is capable of being suspended with lateral movement by means of a suction pad on the interior of a window of a car or train or other vehicle and thus overcome the radio signal isolation otherwise occurring.
- (7) A receiver as in Claims 1, 2, 3, 4 and 5 substantially as described herein with reference to Figures 1-3 of the accompanying drawing.

Amendments to the claims have been filed as follows

(1) A personal radio set for ear-piece reception of public broadcasts contained in a non-metallic box 6.5 x 4.25 x 1.75 c.m. approx. which is predetermined to select from a wide spectrum of radio signals the signals of the particular frequency allotted to the public broadcast radio station operator whose transmission it is desired to receive, the means of so doing being by an untapped aerial coil of the appropriate number of turns over a ferrite rod trimmed by a pre-set capacitor and the unattenuated selected signal being regenerated by an oscillator coil capable of ready movement along the ferrite rod to achieve maximum regeneration. The R.F. signal regenerated and detected in conjunction with the first transistor on amplification at L.F. by two transistors passes to the ear-piece terminal which also serves as a switch the whole being powered by a single cell $1\frac{1}{2}$ volt dry battery.

(2) A personal radio set as in claim (1) which on account of there being no wide-ranging frequency variation requirement giving rise to attenuation of signal strength the need for compensating sub-circuits is eliminated as are wide-ranging frequency variation components thus reducing the size weight and cost of the receiver to acceptable proportions without resort to integrated circuits.

(3) A personal radio set as in Claims 1 and 2 which on account of the simplicity of design, the need for alignment of subsidiary circuits is eliminated and requirement for maintenance is reduced to an absolute minimum.

(4) A personal radio set as in Claims 1, 2 and 3 which on account of the reduced size and weight is capable of being suspended with lateral movement by means of a suction pad on the interior of a window of a car or train or other vehicle and thus overcome the radio signal isolation otherwise occurring or by a buttonhole with the earpiece plug.

(5) A receiver as in Claims 1, 2, 3 and 4 substantially as described herein with reference to Figures 1-3 of the accompanying drawing.